LONGTIME®

Certification standard

Metal Detector

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I. GENERAL INFORMATION

Based on the EN45550 series of standards, and consistent with EN45552 and EN45554, the LONGTIME® specific standards specify elements relating to the study of the robustness, reliability and repairability of the associated product family.
All qualitative, semi-quantitative and quantitative data are derived from a research and consultation process, as required by current standards, and take into account bibliographical references (scientific studies, regulations, standards, etc.) and all stakeholders involved.) and all stakeholders, i.e.: marketers (manufacturers, importers, distributors), their suppliers and/or subcontractors, product experts (repairers, installers, professional testers), spare parts professionals, reconditioners, consumers, consumer associations, environmental associations and any other stakeholder who can contribute, subject to added value and the availability of networks and information.

LONGTIME® vision

This project is part of a dynamic social movement, with the aim of moving ahead of regulations. This label is made by citizens, for citizens. It provides the certainty that the product bearing the label is manufactured for long-term use, as desired by the majority of consumers, and that it is economically repairable.
LONGTIME® is a simple, powerful and effective tool, designed to inform consumers who are concerned about the overall impact of their purchases, as well as those who wish to acquire a product with a fair longevity/price ratio. It also aims to put the spotlight on manufacturers keen to offer products with an optimized lifespan.

Label objectives

The aim is to encourage a different kind of consumption, with a view to producing differently. Virtually all citizens would like to see a transformation of the consumer society, with a real paradigm shift in technical and economic thinking, in order to consume better and more sustainably.
As studies « Modélisation et évaluation environnementale de produits de consommation et biens d'équipement » and « Évaluation environnementale et économique de l'allongement de la durée d'usage de biens d'équipements électriques et électroniques a l'échelle d'un foyer » from the Agence De l'Environnement et de la Maîtrise de l'Énergie Française (ADEME) show, the ecological interest is major: in the space of a few decades, we have multiplied our consumption of raw materials to over 60 billion tonnes a year.
The label helps to preserve the planet's resources by making better use of them and reducing waste.

Intuitively, then, buying a product with an optimized lifespan encourages the rational use of our planet's resources, reduces over-consumption and helps us to move away from disposable and wasteful products. It's not a question of looking for "immortal" products, but rather of fighting against the short lifespan of products.

Impact of durability of metal detector

Extending the lifespan of a metal detector by a few years can help reduce the environmental impacts associated with the upstream phases of its life cycle, prior to use. For other categories of impacts, the benefit of a longer lifespan will largely depend on the energy efficiency of the replacement detector.

Given that the average lifespan of such devices is estimated at around 10 years, and that these products have reached a level of technological maturity in terms of energy efficiency, it is unlikely that an early replacement would offer any environmental advantage.

Fields of application

The label applies to various product categories, provided they consist of an assembly of parts. LONGTIME® aims to cover household appliances, electronic devices, portable electrical tools, furniture, leisure equipment, and professional equipment. The range of products is therefore very broad, but excludes complex technological sectors (such as automotive and aerospace), textile products (except leather goods), foodstuffs, cosmetics, and chemical products.

Reference system organization

The criteria are broken down into 3 main families and grouped into 9 categories. The criteria are presented as follows:

Criteria category

Criteria subcategory

1. Criteria number and name

Each criterion is identified by a number and a name corresponding to its specific theme. In all, there are 38 criteria.

Time marker (Associated with each criterion Cf table below)

Criteria **TO**	These criteria must be met to qualify for certification after the initial audit (year N).
Criteria **T1**	These criteria must be met by at least 70% at the time of the audit. Corrective action will be taken to achieve 100% compliance by year N+1.

CROSS-CUTTING CRITERIA
Criterion applicable to all product categories

- Product Specific Requirement (PSR)
  - Specific criterion whose scope is adapted to the product category of the standard.

Means of proof: Details of the means of proof required and/or relevant to the assessment of the criterion and its PSR.

Control system

Compliance with the standard's criteria is assessed by an independent, accredited inspection body.
Each criterion is assessed according to a compliant/non-compliant approach. Assessment of compliance with the criteria is carried out by an approved, independent inspection body, using auditors who must be qualified by the label manager and who have received initial training in the entire LONGTIME® programme in order to ensure efficient control.
For more details on the control system used in the labeling process, click here:
https://www.longtimelabel.com/conditionslongtime

Standards and regulations

The standards and regulations cited in the standard are based on the most recent versions and/or equivalents published in the Official Journal of the European Union.

General mode of proof

A series of documents and administrative procedures are useful for establishing proof of compliance with various criteria:

- Visual inspection by mandated third-party auditor during in-situ audit
- All European legislation applicable to the product family, in particular: technical specifications referred to in article 12, paragraph 5 of the REGULATION (UE) 2017/1369 present in the European Commission's product conformity database (CE marking database), EMC, ROHS, WEEE, machine safety directives
- Technical specifications for components, materials, coatings and internal or supplier processes
- Quality certification and type 1 or 2 label (Iso 9001, Iso 14001)
- Quality assurance
- Test data
- After-sales service data
- Any documentation/software to support compliance, such as :
  - Internal product data sheet
  - Functional analysis tool
  - Design study (function, materials, usage constraints)
  - Performance and endurance testing
  - Qualification phase and test
  - Failure rate study
  - Operating instructions
  - Maintenance manual
- Terms and conditions of sale

II. PRODUCT SCOPE DEFINITION

The “Metal Detectors” reference framework focuses on portable equipment designed for metal detecting as a recreational activity. These devices enable the detection of buried metallic objects in the ground or submerged at shallow depths in water, by emitting and receiving electromagnetic waves.
This sector-specific reference framework applies exclusively to the products defined within the scope outlined below:

Product scope

- Prospecting equipment
  - Wired metal detector
  - Wireless metal detector
  - Pinpointer

Outside product scope

- Security gate
- Security metal detector

III. NOMENCLATURE OF PARTS

This chapter details a typical nomenclature, representative of the target product group but not exhaustive. The various parts present in the BOM will then be prioritized by type of part.

- **Cane set**
  - Cane (rigid, telescopic)
  - Armrest
  - Grip handle
  - Cane protection
  - Remote control housing mounting system
  - Telescopic locking/unlocking system

- **Control system assembly**
  - Control box (wired or wireless)
  - Analogue or digital display
  - Control button (touch-sensitive, mechanical)
  - Programme selector, switch
  - Status indicator
  - Switch
  - Trigger

- **Electrical and electronic assembly**
  - Power/supply board or electronic module
  - Electronic control card or module
  - Display card or electronic module
  - Wireless communication card or electronic module (radio, Wi-Fi, etc.)
  - Electronic coil card
  - Overheating/overcurrent protection device
  - Loudspeaker
  - Connectors (jack socket, charging connector, etc.)

- **Disc assembly**
  - Disc structure
  - Cane/disc connection system
  - Detection coil
  - Connecting cable
  - Disc protector

- **Battery pack**
  - Cells
  - BMS board (Battery Management System board)
  - Rechargeable cells / Secondary cells (accumulators)

- **Sealing and mechanical joint stabilisation assembly**
  - Sealing mechanism (O-ring, ring seal, lip seal, silicone, etc.)
  - Retention mechanism (screws, bolts, circlips, washers, etc.)
  - Stabilisation mechanism (spring, spacer, housing, bearing, etc.)
  - Translation mechanism (slides / slide rails)

IV. PRIORITIZATION BY PARTY CATEGORY

Product housing

This covers all the parts used to protect the product's internal components from the outside world.

- Not identified according to the LONGTIME® reference framework definition

Functional parts

Parts related to the operation or use of the product without additional features.

- **Shaft assembly**
  - Cane (rigid, telescopic)
  - Grip handle
  - Telescopic locking/unlocking system
- **Electrical and/or electronic assembly**
  - Loudspeaker
- **Control system assembly**
  - Analogue or digital display
  - Control button (mechanical, touch-sensitive, sensitive)
  - Programme selector, programmer, switch
  - Status indicator
- **Disc assembly**
  - Disc structure
- **Sealing and stabilisation kit for mechanical connections**
  - Sealing mechanism (O-ring, ring, lips, silicone, etc.)
  - Retaining mechanism (screws, bolts, circlips, washers, etc.)
  - Stabilisation mechanism (spring, spacer, bucket seat, bearing, etc.)
  - Translation mechanism (slides)

Priority parts

Parts that are functional but critical in the event of malfunction or breakdown (sometimes called critical parts).

- **Electrical and/or electronic assembly**
  - Power/supply board or electronic module
  - Electronic control card or module
  - Display card or electronic module
  - Wireless communication card or electronic module (radio, Wi-Fi, etc.)
  - Electronic coil card

- Overheating/overcurrent protection device

- **Battery pack**
  - Cells
  - BMS card

- **Disc assembly**
  - Detection coil

Vulnerable parts

Parts exposed to a high rate of accidental user breakage.

- **Shaft assembly**
  - Armrest
  - Remote control housing mounting system

- **Control system assembly**
  - Switch
  - Trigger
  - Control box

- **Electrical and/or electronic assembly**
  - Connectors (jack socket, battery connector, etc.)

- **Disc assembly**
  - Cane/disc connection system
  - Connecting cable

Consumable or maintenance parts

Consumable parts are those parts that need to be replaced more or less frequently, depending on the pattern of deterioration over the product's lifetime. Maintenance parts require regular servicing to keep the product in optimum working order.

- **Consumable parts**
  - **Shaft assembly**
    - Cane protection
  - **Battery pack**
    - Accumulators
  - **Disc assembly**
    - Disc protector

V. CLASS OF REPARABILITY CRITERIA

1. Class system

The criteria in the "Repairability" family use a system of classes to prioritize the level of requirement for each type of part.
These classes range from A to E.
Class A represents best practice in reparability. The lower classes (B, C, up to D or E) reflect a decreasing level of relevance of practices, but should always be considered in relation to market practices.

The definition of classes is the subject of a study for each repository, in order to identify best market practices.

2. Disassembly depth of parts

The dismantling step count starts when the safety conditions for the user are met. A step is an operation leading to the removal of a part or a tool change. Example:

- Remove cover by sliding with hand = 1 step
- Remove cover by unscrewing 4 Phillips screws = 1 step
- Remove cover by unscrewing 2 Phillips and 2 Torx screws = 2 steps

VI. EXPOSURE TO EXOGENOUS FAILURES

Definition

An exogenous failure refers to a defect or problem in the manufactured product that occurs due to external factors or conditions beyond the control of the manufacturer or producer.
As opposed to an endogenous failure, which is linked to internal problems (design, manufacturing, quality), an exogenous failure is generally the result of unforeseeable external circumstances (e.g. extreme environmental conditions, transport accidents, inappropriate handling by the end-user, component failures from third-party suppliers, etc.).
Managing exogenous failures in product manufacturing may involve implementing quality control measures, rigorous testing, supply chain management, warranties and return policies to deal with problems that may arise due to these external factors.

Exogenous failure criteria

User risk:

Reflects the ability to respect conditions of use in the face of the weight of the constraints of use.
Associated levels:

- Low: the user scrupulously respects the product's rules of use, particularly for quality and safety reasons.
- Medium: the user generally respects the product's rules of use
- High: the user rarely respects the product's rules of use

Product handling:

Reflects the possibility of false handling, shocks, falls.
Associated levels :

- Low: Not handled
- Medium: Handling without moving or dismantling
- High: Handling with moving or dismantling

Weather exposure:

Refers to exposure to rain, hail, frost, wind, sand, lightning, dust, salt spray...
Associated levels:

- Low: No exposure (indoors)
- Medium: Indirect exposure (hold, station concourse)
- High: Direct exposure (outdoors)

Definition of the different phases

- Inactivity: The appliance has power but is not performing any active tasks. It is in a state where it is not being used for specific functions and is not executing background operations.

- **Transport:** Phase of transporting the detector to its place of use, storage, maintenance, etc.

- **Activity:** The device is operational, performing tasks, and consuming energy due to its active operation. This is the phase in which the device is most heavily used and utilises all of its available features to meet the user's needs.

- **Cleaning/Maintenance/Servicing:** This phase involves regular servicing of the device to optimise its performance and ensure its long-term proper functioning. It includes tasks related to physical and software maintenance, aimed at preventing problems and improving the device's lifespan.

- **Storage/Shelving:** This phase corresponds to the period during which the device is not actively used and/or is placed in a storage environment.

Phase	User risk	Product handling	Weather exposure	Overall risk
Transport	Medium	Medium	Faible	Medium
Activity	High	High	High	High
Cleaning	Low	Low	Low	Low
Storage/Shedding	Medium	Low	Low	Low

Assessment of the overall risk of exogenous failure:

MEDIUM

This product category is subject to a high risk of exogenous failure. The main exogenous failure risks for product are as follows:

- Transport phase: Negligence during transport leading to falls, impacts or vibrations
- Activity phase:
  - Risk of the product falling due to misuse or user negligence
  - Risk of impact due to misuse and/or negligence on the part of the user
  - Exposure to the elements related to the environment of use
- Storage/warehousing phase
  - Risk of deep discharge

VII. LABEL CRITERIA

Reliability

Conception

1. Stress resistance

T0 Criteria

The producer identifies the functions of the product and its components, as well as the associated critical use constraints. He demonstrates sustainable design choices, optimized by reliability and/or repairability strategies.

Mode of proof: General mode of proof supplemented by a set of data appropriate to the sub-criteria, including the application of product-related test standards: (This list of proof methods is representative but not exhaustive. It is not required to have all these modes of proof in order to comply with the criteria; they are merely indications)

- *In-warranty and out-of-warranty failure rates: The product must demonstrate failure rates below the industry average.*
- *Accelerated life testing. As the duration of the test is limited, scientific and robust projection calculations (acceleration factor) are used to extrapolate the results to the product's maximum total lifetime, demonstrating resistance to stress above the market sector average.*
- *The methodologies used can be based on general standards, on mandatory standards linked to safety directives and including elements of resistance to stress in use, or on voluntary standards.*
  - *EN 45552: General method for assessing the durability of energy-related products*
  - *EN 60721 : Classification of environmental conditions*
  - *IEC 60605 : Reliability testing of equipment*
  - *IEC 61123 : Reliability testing - Compliance test plans for pass rate*
  - *EN 61124 : Reliability testing - Compliance test plans for constant failure rate and constant failure intensity*
  - *EN 61649: Weibull analysis*
  - *EN 62506: Accelerated product test methods.*
  - *EN 60335-1 COMPIL 15 Household and similar electrical appliances - Safety - Part 1: General requirements*
  - *EN 50564 - Electrical and electronic appliances for household use and office equipment - Measurement of low power consumption*
  - *EN 60068-2-38 (resistance of components to temperature and humidity)*
- *Instruments used for testing: all instruments used for testing must be calibrated and a valid calibration report must be available. Calibration must be carried out prior to testing. Calibrations must be traceable to national standards.*

❖ **Resistance to mechanical stress**

- Resistance of the copper-coil immobilisation mechanism to a series of 2,000 low-intensity random shocks, without any major functional failure (all nominal primary functions).

- Resistance to 2 drop cycles (1 cycle requires 1 drop on each of the 4 sides) from a height of 80 cm onto a hard surface (concrete, marble) without major malfunction (all primary functions remain operational).

Mode of proof:

- *Impact resistance test according to EN 60068-2-27*
- *Drop test according to EN 60068-2-31*

- Bending resistance of the shaft assembly achieved through appropriate design and material selection.
  - Shaft–coil connection
  - Shaft
  - Armrest

- Resistance to 20,000 bending cycles at an angle of 60° with a weight of 300 g applied to the cable. Lifting distance: 40cm～50ms and pivoting speed: 30 times/min.

- Cable torsion resistance: resistance to 5,000 torsion cycles at ±45° with a load of 500g applied to the cable. Lifting distance: 40cm～50cm and oscillation speed: 30 cycles/min

Mode of proof:

- *Bending test according to a standard suitable for the materials (EN ISO 178 or other)*
- *Cable bending test according to IEC60884-1-3*

- Resistance to tearing with a minimum force of 20 kg
  - Shaft–coil connection system
  - Connection cable (spliced at the coil)

Mode of proof:

- *Pull-off test according to EN ISO 12996*
- *Cable pull-out test according to IEC60884-1-3*

- Wear resistance of removable components. No variation in functional clearance observed.
  - Telescopic shaft: 500 extension and retraction operations
  - Connector (jack, charging connector): 10,000 insertion and withdrawal cycles without contact degradation
  - Removable control-box mount: 500 insertion and removal operations

Mode of proof:

- *Specific testing of extractable elements*
- *Specific test of the pivot/ball joint system of the disc/rod connection*
- *Specific test for connecting/disconnecting connectors in accordance with IEC 60512-9-1*
- *Specific connection/disconnection test*

- Abrasion resistance
  - Abrasion-resistant disc surface with provision of a disc protection system under conditions of use

- Abrasion-resistant protective and finishing materials or coatings for materials subject to oxidation

Mode of proof:

- *Abrasion resistance test according to a standard suitable for the material, such as NF EN ISO 5470-2 or DIN ISO 9352*

❖ Resistance to thermal stress

- Resistance to dry heat without major malfunction: storage for at least 48 hours at >= 60°C and operating temperature for at least 4 hours >= 40°C.
- Cold resistance without major malfunction, storage for at least 48 hours at <= -10°C and operating temperature for at least 4 hours at <= -20°C.

Mode of proof:

- *Dry heat test according to NF EN 60068-2-2*
- *Cold test according to NF EN 60068-2-1*

❖ Resistance to electrical stresses

- Resistance to electrical surges and power grid fluctuations
  - EOS protection circuit
  - Protection of electrical and electronic components against the risks of electrostatic discharge
- Battery retaining 80% of its charge capacity after 500 cycles

Mode of proof:

- *Electrostatic discharge immunity test type IEC-61000-4-2*
- *IEC 61960-3 Lithium secondary cells and batteries for portable applications*
- *Accelerated wear/lifetime testing (e.g. HAL, HAST)*

❖ Resistance to liquids and oxidation

- Minimum IP 68 rating for the drive
- Minimum IP X5 rating for electronic components
  - Control box
  - Headphones
- Corrosion-resistant and exposure-resistant wireless coil charging system (dust and water splashes).

Mode of proof:

- *Compliance with the IP rating appropriate to the conditions of use defined in standard EN 60529.*
- *Salt spray test according to EN ISO 9227*

❖ Chemical resistance

- Resistance to plant protection products (sunscreen) and perspiration
  - Shaft armrest
  - Shaft handle / Grip handle

Mode of proof:

- *Exposure test to the plant protection product according to EN ISO 175*
- *Sweat exposure test according to EN ISO 2812-1*

❖ **Resistance to UV radiation stress**
- Resistance of materials and coatings to UV radiation

Mode of proof:
- *Accelerated sunlight exposure test adapted to a standard suitable for the material, such as ISO 4892-2 or EN ISO 16474-2*

Production

2. Production line

T0 Criteria

The manufacturer has the processes in place to control and maintain consistently high manufacturing and assembly quality during the production phase.

❖ The main site(s) involved in the production of the product is/are certified to an international quality management standard.
- Site involved in the manufacture of ISO 9001 electronic cards
- Site involved in the manufacture of ISO 9001 detection coils
- Site involved in the manufacture of ISO 9001 resin

Mode of proof:
- *Annual quality control of production sites and the production chain by a third party as a minimum. Demonstration of compliance with ISO 9001 principles by verification of quality procedures or by equivalence in other certifications.*
- *In the event of subcontracting through direct purchase for subsystems identified in PSR*

3. Logistics

T0 Criteria

The manufacturer reduces risks to the reliability of components and assemblies through efficient quality processes for managing supply, packaging, storage, handling and transport conditions.

❖ Inventory control and management
- The condition of products in stock and processable materials is regularly monitored, with dedicated processes to check and estimate unloading time, the date of manufacture and mode of transport (unique identifier).
- Periodic inventories are carried out, and in the event of non-compliance, a reminder is systematically sent out. The conformity of items and materials in stock is clearly identified, and non-compliant products are placed in dedicated areas.
- Storage conditions for articles and materials are measured and controlled continuously or periodically, with specifications and control limits validated by an independent authority.

❖ Handling and transport procedures

- Specific handling procedures are defined and controlled to avoid any deterioration of the product during delivery, handling and transport.
- Handling, storage, packaging and preservation conditions are codified, including considerations of shelf life, sensitivity to stress, and product hazard.

❖ Product traceability and protection
- Exhaustive traceability makes it possible to identify and know the history of the product, including the components and documentation associated with its life cycle.
- Genuine conformity checks on finished products are carried out before they are put into storage, and are formally described and validated by an independent authority.

General mode of proof

4. Supply chain

T0 Criteria

Within its value chain, the producer details the performance of its quality management linked to the reliability of its suppliers' goods or services in direct relation to its manufacturing phases.

❖ Particular attention will be paid to the following elements:
- Relay (third-party quality certification required)
- Capacitor (third-party quality certification required)
- Power cable and wiring (third-party quality certification required)
- Electronic card

Mode of proof:
- *Annual quality control of the production site and its production line by a third party as a minimum.*
- *Demonstration of compliance with ISO 9001 principles through verification of quality procedures or equivalence in other certifications.*
- *For companies with more than 250 employees and for subsystems identified in PSR (in the case of subcontracting), ISO 9001 certification issued by an accredited third-party inspection body.*
- *For subcontracting companies with fewer than 50 employees or in the case of product development based on the manufacturer's specifications, verification of the quality system, the history of the collaboration and the failure rates associated with the system in question.*

Quality control

5. Reliability plan

T0 Criteria

The producer provides a history of product versions and identifies the changes implemented to improve product durability.

❖ The manufacturer is able to demonstrate the following points:

- Identification and monitoring of failures by the technical departments of the manufacturer or its subsidiaries, with supporting statistics
- Documented reporting of failures according to structured and systematic processes to central departments (Technical/Quality/R&D)
- Handling and processing of reports by R&D departments, with concrete modifications made to products to constantly improve their reliability and durability.
- Tracking of modifications made, and for major modifications involving the product's primary function : statistical measurement of their impact to attest to the effectiveness of the improvements made.

Mode of proof: demonstration of quality management to the appointed inspection body during the on-site audit.

6. Breakthrough technology

T0 Criteria

The manufacturer provides information on the share of breakthrough technology embodied in the product, and identifies the functions associated with it. He demonstrates the reliability of this technology, all the more so if it concerns a primary function. This applies to both hardware and software innovations.

General mode of proof

7. Breakdown rate

T1 Criteria

The producer tracks actual failure rates and/or indicators by product part in order to monitor product reliability at least until the last unit of the model concerned has been put on the market.

❖ Particular attention will be paid to failures in the following parts:

- Electronic failure
  - Faulty electronic control board (capacitor, relay, Triac)
  - Short circuit (electronic board, component, printed circuit board)
  - Electronic display card or HS card component
  - Display module malfunction (backlight, LED, etc.)
- Failure of the control device (buttons, touch system, electronic card, programmer)
- Failure of the cane (particularly telescopic)
- Failure of the disc/rod connection

General mode of proof

User information

8. Product identification

T0 Criteria

The producer uses a method that allows unequivocal identification of the product and its version by interested parties in order to maximize maintenance and failure management processes.

General mode of proof

9. Completeness of usage information

T0 Criteria

The manufacturer publishes a manual detailing the product's use and care instructions, and provides the user with a maintenance plan. This information, which is also available online, must be exhaustive and relevant in order to reduce exogenous failure rates and encourage responsible use.

- The manufacturer clearly informs the user of the scenario(s) of use that will enable the energy consumption of the electrical appliance to be reduced as much as possible and explains the differences in consumption between the different modes of operation if necessary (ready for use, deep standby, complete shutdown, etc.).

- The manufacturer clearly informs the user how to properly maintain their product by providing the following information:
  - Use of appropriate protection
  - Information on battery charging
  - Clean the appliance regularly.

General mode of proof

10. Usage information format

T1 Criteria

The manufacturer publishes a clear, simple and accessible user and maintenance manual (font size, vocabulary, language and print quality), so that it can be easily understood by end-users.

- The service manual should be available for anyone to read, free of charge.
- Instructions on how to replace the battery must be available to anyone, free of charge, online for 10 years.

General mode of proof

11. Prolonged immobilization

T0 Criteria

The manufacturer identifies the risks of failure associated with prolonged product downtime. He informs the end user of the conditions of use necessary to prevent these risks.

- Applicable: Product family sensitive to non-use in the event of prolonged immobilization: risk of battery degradation.
- Consistent duration of non-use: 1 year.

General mode of proof

Repairability

Technical repairability

12. Disassembly of parts

T0 Criteria

The disassembly depth is adapted to the category of product parts and the disassembly time is consistent with the type of profile normally capable of carrying out the process.

- Class A: ≤ 3 steps and less than 10 minutes
- Class B: between 4 and 10 steps and less than 15 minutes
- Class C: between 10 and 15 steps and less than 20 minutes
- Class D: more than 15 steps and more than 25 minutes

Types of parts	Class
Product housing	A
Functional	B
Priority	B
Vulnerable	A
Consumable	A

General mode of proof

13. Part fasteners and connectors

T0 Criteria

Fasteners and connectors have removability and reusability characteristics appropriate to the category of product parts. A system is in place for locating these non-visible fasteners.

- Class A : Removable and reusable
- Class B : Removable but non reusable
- Class C : Neither removable nor reusable

Types of parts	Class
Product housing	A
Functional	B
Priority	B
Vulnerable	A
Consumable	A

❖ The fasteners for the various priority parts of the product that have both a mechanical and electrical function must be removable and reusable (Class A standard EN45554).If

the fastening system cannot be reused, it must be supplied with the replacement part to enable the failure or maintenance scenario to be resolved.

General mode of proof

14. Tools

T0 Criteria

The tools required for repair and/or disassembly must be suitable for the category of product parts.

- Class A: repairs feasible without the use of tools, with tools supplied or with General-purpose tools
- Class B: repairs feasible with tools specific to the product family
- Class C: repairs feasible with other commercially available tools
- Class D: repairs feasible with proprietary tools
- Class E: repair not feasible with any existing tool

Types of parts	Class
Product housing	A
Functional	A
Priority	A
Vulnerable	A
Consumable	A

❖ Tolerance allowed for proprietary tools supplied or loaned on request, at no extra cost, with spare part.

❖ The battery is removable. It is considered removable when it can be removed individually from the equipment, without tools or with the help of common commercially available tools, or with tools supplied free of charge with the equipment or battery.

General mode of proof

15. Working environment

T0 Criteria

Product-specific repair scenarios are carried out in a working environment adapted to the product part category.

- Class A: use environment
- Class B: workshop environment
- Class C: production environment

Types of parts	Class
Product housing	A

Types of parts	Class
Functional	A
Priority	A
Vulnerable	A
Consumable	A

General mode of proof

16. Competence level

T1 Criteria

The level of technical skill required to carry out a repair is consistent with the category of parties involved.

- Class A: Novice skills
- Class B: Generalist skills
- Class C: Expert skills
- Class D: Manufacturer or approved expert
- Class E: Impossible to achieve with existing skills

Types of parts	Class
Product housing	A
Functional	B
Priority	B
Vulnerable	B
Consumable	A

❖ In particular, the battery is replaceable by end-users with novice repair skills.

General mode of proof

17. Spare parts interface

T0 Criteria

The various parts of the product and their connection interfaces are standardized to meet the repairability expectations of the product family.

- Class A: Standard part with standard interface
- Class B: Standard or proprietary part with standard interface
- Class C: Proprietary part with non-standard interface

Types of parts	Class
Product housing	B
Functional	B
Priority	B
Vulnerable	B

Consumable	B

- Part pairing practices are prohibited.
- Replacement parts need to be compatible from a technological specification perspective to function properly and it must not play a role if the part is new or reused and if it is from the original manufacturer or a 3rd party.

General mode of proof

Organizational reparability

18. Spare parts availability time

T0 Criteria

The availability time for spare parts is at least equal to the expected service life of the product category and its individual parts. The availability period is measured from the time the last unit of the model concerned is put on the market.

- Class A: Long-term accessibility - minimum 7 years
- Class B: Medium-term accessibility - between 3 and 7 years
- Class C: Accessibilité à court terme - maximum 3 years
- Class D: No information on duration of accessibility

Types of parts	Class
Product housing	A
Functional	A
Priority	A
Vulnerable	A
Consumable	A

- In the event that a replacement part is not available from the manufacturer or his distribution network, the manufacturer shall clearly provide the user, via the documentation made available to him, with the information and/or characteristics of the parts enabling him to use instead an adaptable or compatible replacement part available on the market for a period at least equal to that specified in the above table.

General mode of proof

19. Accessibility of spare parts to target audiences

T1 Criteria

The producer ensures the availability of spare parts for the target groups normally suited to the category of parts..

- Class A: Accessible to end users
- Class B: Accessible to independent repair service providers
- Class C: Accessible to service providers approved by the manufacturer

- Class D: Accessible only to the manufacturer

Types of parts	Class
Product housing	A
Functional	A
Priority	A
Vulnerable	A
Consumable	A

❖ The spare parts and the procedure for ordering them shall be publicly available on the free access website of the manufacturer, until the end of the period of availability of these spare parts.

General mode of proof

20. Terms and conditions for the sale of spare parts

T1 Criteria

The manufacturer details the terms of sale of its spare parts. They reflect the product nomenclature and are not sold as a group, unless justified by coherent and verifiable design, calibration and/or economic reasons.

❖ Particular attention will be paid to items in the following categories:
- Priority parts
- Vulnerable parts
- Consumable parts

General mode of proof

21. Spare parts prices

T1 Criteria

The value of a spare part may not exceed a maximum percentage of the recommended selling price excluding VAT. A tolerance is allowed for parts whose PRU exceeds the specified percentage.

❖ Maximum percentage of the price of one of the parts in relation to the price of the product : 25%.

❖ The manufacturer studies and clearly proposes to the user, through the information medium of his choice, repair scenarios enabling repair costs to be limited to 30%, including VAT, potential shipping costs, spare part and working time of repairer.
These scenarios apply in the event of the failure of a single part.

General mode of proof

22. Shipping costs for spare parts

T1 Criteria

The producer delivers the spare parts at the actual cost of shipping and preparation, or offers alternative solutions that reduce the cost of receiving the parts.

General mode of proof

23. Spare parts delivery times

T1 Criteria

The manufacturer demonstrates its ability to supply spare parts to interested parties within 5 working days.

General mode of proof

24. Documentation of failure scenarios

T1 Criteria

The manufacturer makes available relevant information and instructions for resolving failure scenarios and/or implementing the maintenance plan.

These are also adapted to the product category and target audience groups. The minimum duration of information availability is specified below.

- Class A = Accessible to all without restriction
- Class B = Accessible to independent repair service providers
- Class C = Accessible to repair service providers authorised by the manufacturer
- Class D = Accessible to the manufacturer only

Documentation	Class	Time to availability
Disassembly diagrams, reassembly diagrams if necessary, or exploded views	A	10 years
Wiring and connection diagrams	A	10 years
Instructions for replacing the battery	A	10 years
A technical manual with instructions on how to resolve failure scenarios	A	10 years
A list of necessary repair and testing equipment	A	10 years
Information concerning components and diagnostics (such as minimum and maximum theoretical values for measurements)	B	10 years
Error and diagnostic codes	A	10 years
Software instructions, including reset	A	10 years
Access to incidents reported and recorded in the equipment	B	10 years
Technical bulletins	B	10 years
Instructions on how to contact customer service and specific contacts associated with it	A	10 years

Documentation	Class	Time to availability
Information on spare parts prices	A	10 years

General mode of proof

25. Support for fault diagnosis

T0 Criteria

The producer communicates information and/or deploys diagnostic support mechanisms to help identify failure scenarios.

- Class A = Intuitive interface
- Class B = Coded interface with public reference table
- Class C = publicly accessible hardware/software interface
- Class D = Proprietary interface
- Class E = Impossible, whatever the type of interface

❖ Class A :
Diagnostic support system with intuitive or coded interface and public access to the reference table.
OR
The sales website of the product's manufacturer or distribution partners features a fault-tree diagnostic interface.

General mode of proof

Scalability

26. Reset settings and passwords

T0 Criteria

In the event of repair or transfer to a third party, the product's user data management processes enable secure, high-performance reuse.

- Class A = Integrated reset
- Class B = External reset
- Class C = Service reset
- Class D = No reset

❖ Class A : Factory settings can be restored via a built-in function.

General mode of proof

27. Software

T0 Criteria

The manufacturer ensures that the original performance of its product is maintained when updating the operating system and/or firmware, and differentiates between evolutionary and

corrective updates. Users are informed of the consequences of updates, and their consent is required.

- The minimum availability time for updates is 8 years for products equipped with IOT functionalities.

General mode of proof

Quality of after-sales service

28. Internal failure resolution policy

T1 Criteria

In the event of product failure, the manufacturer pursues a policy of repair or reconditioning rather than replacement, unless repair is more expensive than replacement, taking into account the wishes of users.

General mode of proof

29. Service contact

T1 Criteria

The producer demonstrates that the opening of an after-sales service file does not exceed 2 working days and that the average time taken to resolve the file encourages repairs.

General mode of proof

30. Return services

T0 Criteria

The manufacturer provides end-users with return services adapted to the product category and consistent with its distribution network, regardless of the status of warranties.

- Class A = Complete return options
- Class B = Basic return options
- Class C = No return option

- Class A: Full return service

- Class B: Basic return service with minimum return conditions by post or distribution/collection point

General mode of proof

31. Return condition

T0 Criteria

The return of the original packaging cannot be demanded for the repair of the product, as long as it is packaged and protected as much as it could have been at the time of purchase.

General mode of proof

32. Useful product

T1 Criteria

In its network, and for product categories considered "highly useful", the manufacturer minimizes the repair process time until the product is returned to the end-user.

- Not applicable

General mode of proof

33. Warranty time

T0 Criteria

The warranty period with presumed anteriority of defect may not be less than 24 months.

- Minimum 5 year warranty.

General mode of proof

34. Warranty exclusions

T0 Criteria

In its general warranty conditions, the manufacturer does not introduce any abusive exclusion(s) with regard to the normal use of the product.

Examples of abusive exclusions identified:

- Surface micro-scratches
- Dust marks

General mode of proof

Lifecycle

Sustainability

By having a type 1 ecolabel certification for its product, the manufacturer automatically validates compliance with all the Life cycle category criteria.

Mode of proof: Type 1 certification to ISO 14024 from the list below

- *TCO certified*
- *EPEAT*
- *Eco-rating*

35. Health, safety and environmental protection

T0 Criteria

With regard to human health, the safety of people and installations, and environmental protection, the manufacturer proves that it is taking action at a level that complies at least

with the requirements of European directives 2011/65/EU and (EC) No 1907/2006 on the restriction of the use of certain hazardous substances in equipment, and/or action to preserve the ecosystems that are most affected.

Mode of proof: For products distributed in geographical areas potentially covered by regulatory prerogatives establishing requirements similar to the European market in terms of limiting the use of certain hazardous substances in EEE, proof of compliance with these regulatory requirements will be used as a method of proof in compliance with the RSPs of this criterion if necessary.

- For large companies (workforce > 5,000 people), the main site(s) involved in the production of the product has/have certification linked to an international environmental management standard.

Mode of proof: ISO 14001 certification issued by an accredited third-party inspection body.

- In order to reduce the impact of the manufacturing phase, the manufacturer implements at least two of the following three features:
  - Paints or other coating products used on electrical appliance casings are exclusively water-based or bio-based.
  - The site responsible for the "foundry/resin production" phase has third-party quality certification related to environmental management, such as ISO 14001.
  - At least 50% of the metal parts of the cane are made from recycled materials.

- Au moins 50 % des composants du produit ont une conception identique à celle des autres équipements du même fabricant ainsi que des produits de la même catégorie de performance et génération.

Mode of proof: Composition and characterisation of paints. Third-party quality certification demonstrating the environmental friendliness of the paints used, in accordance with recognised testing standards. Certificate of origin for the materials used in the composition of the parts.

- Life Cycle Assessment (LCA) : The characteristics of the product and the manufacturer's practices result in a minimum **class D** among the classes listed below.

Requirements	Class					
	A	**B**	**C**	**D**	**E**	**F**
The product's LCA is critically reviewed by a third party. The review report must include at least : - The number of years of experience in the field of LCA/PCF - Number of carbon footprints reviewed - Number of carbon footprints completed	x					
The product LCA is based on the specific product mode.	x	x				
The product LCA is based on the product's family of models, but not the specific product model			x	x	x	

The full LCA report including all assumptions is publicly available and based at least partially based on real material data (Full Material Declarations)	x	x	x			
Concrete actions are taken to reduce the impact of the most impacting phase(s) of the life cycle	x	x	x	x		

Mode of proof: LCA report produced by a qualified consulting firm. Public commitment to carry out an LCA corresponding to the Class indicated below, within 12 months of the audit.

- Fair mined material and/or recycled material : The characteristics of the product and the manufacturer's practices result in a minimum **class D** among the classes listed below.
  - Class A : 40% minimum of weight
  - Class B : 35% minimum of weight
  - Class C : 30% minimum of weight
  - Class D : 25% minimum of weight
  - Class E : 20% minimum of weight
  - Class F : <20% minimum of weight

Mode of proof: proof of origin of materials used to make the product

- The batteries comply with the limit values of European Directive 2006/66/EC. The limit value for batteries is 0.0005% for mercury, 0.002% for cadmium and 0.004% for lead per listed component.

Mode of proof: for product groups and geographic distribution sectors potentially covered by regulatory prerogatives establishing requirements for limiting the use of certain hazardous substances in electrical and electronic equipment, proof of compliance with these regulatory requirements will be used as evidence in meeting the SPRs of this criterion where necessary.

36. Energy and/or environmental performance

T0 Criteria

To reduce the impact of energy consumption or pollution emissions, the manufacturer demonstrates the environmental and/or energy performance of its products.
It proves that it is taking action at a level that complies, as a minimum, with the prerogatives of European directives and/or regulations :

- (EU) 2009/125/EC (including its implementing measures) on the eco-design of energy-related products
- (EU) 2017/1369 (including delegated regulations) on the energy labeling of products if the product claiming the LONGTIME® label is concerned
- ESPR - The Ecodesign for Sustainable Products Regulation (EU) 2024/1781

Mode of proof: for products distributed in geographical areas potentially covered by regulatory prerogatives establishing requirements for energy efficiency, eco-design and energy labelling similar to the European market, proof of compliance with these regulatory requirements will be used as a method of proof in compliance with the RSPs of this criterion if necessary.

- When not in use, electrical appliances consume a maximum amount of energy equivalent to:
  - Maximum 0,5 watt en mode veille (sans affichage d'informations)
  - Maximum 1 watt lorsque celle-ci fournit des informations (heure, température d'eau, code erreur)
  - Maximum 2 watt en IOT

Mode of proof: Eco-design measures assessed by the notified body during the audit and supplemented by the documentation and technical specifications referred to in Article 12(5) of REGULATION (EU) 2017/1369, available in the European Commission's database and relating to product compliance.

- Every final assembly plant manufacturing the product and with an annual energy consumption exceeding 1 GWh is ISO 50001 certified.
  OR
  The company has a greenhouse gas (GHG) emissions reduction strategy that will enable a reduction of at least 35% in absolute scope 1 & 2 emissions by 2030 and is implementing concrete measures relating to energy efficiency, energy conservation and the use of renewable energies.

Mode of proof:
  - *Certification ISO 50001 par une tierce partie*
  - *Bilan GES score 1,2,3, conforme au standard ISO 14064 (ex : Bilan Carbone®, GHG Protocol) de moins de 3 ans.*

37. Equipment end-of-life management

T0 Criteria

As part of the management of end-of-life equipment, the manufacturer proves that it deploys actions for the collection, recovery and effective treatment of used products according to a level of requirement that complies at least with the prerogatives of European directives 2012/19/EU of July 4, 2012 on waste prevention and treatment depending on the target product group.

- Identification of materials used in product parts that are primarily plastic and weigh more than 5 grams.

Mode of proof: compliance with ISO 11469 and ISO 1043-1-2-3-4 standards.

- Extended Producer Responsibility (EPR) and reuse, refurbishment and/or recycling of parts and products : the characteristics of the product and the manufacturer's practices result in a minimum **class B** among the classes listed below.

Class A	For the main markets (> 10% of sales of certified product) where certified products are sold, the brand owner provides a take back scheme which demonstrably promotes and puts into practice reuse and/or refurbishment of parts and products, as opposed to recycling only, while being legally compliant with applicable EPR regulations

Class B	For all markets where certified products are sold and where EPR regulations apply, the brand owner participates in accredited EPR schemes or provides a reuse/recycling scheme which fulfills the requirements to be exempted from participation in EPR schemes. In all markets without EPR regulations, the brand owner provides voluntarily a take back possiblitiy involving accredited reuse/recycling facilities
Class C	For all markets where certified products are sold and where EPR regulations apply, the manufacturer participates in accredited EPR schemes or operates a reuse/recycling scheme which fulfills the requirements to be exempted from participation in EPR schemes (legal compliance)

Mode of proof: In geographic distribution areas covered by regulatory prerogatives establishing product collection and recycling requirements, proof of compliance with these regulatory requirements will be used as a method of proof in compliance with the RSPs of this criterion if necessary. Use of EPR and/or reuse/recycling facilities certified to internationally accredited standards (R2, e-Stewards, EN50625 or equivalent)

38. Packaging management

T1 Criteria

As part of the fight against waste production, the manufacturer is making efforts to eliminate the proportion of non-recyclable plastic waste from its packaging through:

- At least 95% of the weight of packaging waste consists of recycled and/or recyclable and/or reusable materials
- Manual separability of non-reusable and non-valorizable packaging components weighing more than 25 grams in a single component
- Product packaging must not contain lead (Pb), cadmium (Cd), mercury (Hg) or hexavalent chromium (Cr6).
- Plastic packaging material must not contain halogens bound to organic substances

Mode of proof: Composition and characterization of packaging.

VIII. TERMS, DEFINITIONS, CLARIFICATIONS

Depending on the sector, specific definitions for different product categories (parts, functions, etc.) may be added to the recurring definitions below.

Actual failure
Failure that is effectively linked to a malfunction of the product and not to an exogenous problem (e.g. unpowered socket, incorrectly connected power cable, poorly locked lid, etc.).

Adaptable or compatible spare part
These are parts that can be adapted to several models and brands of the same product, more or less faithful copies of original parts that are not manufactured to the original manufacturer's specifications and are not sold in the original manufacturers' packaging.

After-sales service file
An After Sales Service File is a record documenting the handling of a customer request or issue following the purchase of a product. It includes all relevant information about the customer interaction, the issue reported, steps taken to resolve it, and any communication between the customer and the company. In cases where customer support teams manage the initial contact, the file may be passed on to the after-sales service team for further handling when needed, ensuring that all necessary actions are taken to resolve the issue.

The response time for handling such requests does not exceed an average of duration described in criteria 29. There may be flexibility for periods of high demand (e.g., during product launches or holidays) that are justifiable in relation to market practices.

An automated email confirming receipt of the request is not considered sufficient for compliance to criteria 29.

AMDEC / FMEA
Tools for Failure Mode and Effect Analysis / Analyse des Modes de Défaillance, de leurs Effets et de leur Criticité.

Breakthrough technology
A technology that introduces a major advance over existing solutions or practices. It is distinguished by its significant impact on performance, functionality or efficiency, and can change standards or redefine an industry. Unlike incremental improvements, a breakthrough technology often disrupts the market or the field of application, offering substantial benefits or opening up new possibilities. This can apply to both hardware and software innovations.

Circular economy part (CEP)
PIEC are second-hand goods within the meaning of art. L. 321-1 of the French Commercial Code, and cannot be universally defined, but are defined on a case-by-case, sector-by-sector basis.
For the time being, CEIPs are defined in consumer law for the following sectors: automobiles, household appliances, electronics, motorized DIY and gardening tools, sports and leisure equipment and motorized personal transport devices.

For household electrical and electronic equipment, art. R. 224-30 code de la consommation states: "For the application of article L. 224-109, parts from the circular economy are understood to be components and elements resulting from an operation of preparation with a view to their reuse" where article 541.1.1 defines "preparation with a view to reuse" as any operation of control, cleaning or repair with a view to recovery by which substances, materials or products that have become waste are prepared in such a way as to be reused without any further operation.

Competence level

Solving a failure scenario may require skills such as the ability to identify and locate the failure, access the affected area in the product, handle the appropriate tools, and manage any risks associated with the product, the environment and the operator. Depending on the level of technical skill required to carry out the repair, several levels are defined:

- **Novice:** When no specific repair experience or qualifications are required to carry out the failure scenario resolution process.

- **Generalist:** When the resolution of a scenario is not achievable by a novice, but can be achieved by a person with general knowledge of basic repair techniques and necessary safety measures

- **Expert:** When a scenario cannot be solved by a novice or generalist, but can be solved by people with specific expertise or experience related to the product group in question.

- **Manufacturer:** When the resolution of a scenario is not feasible by a novice, generalist or expert, but can be performed by the manufacturer or a person specifically trained and accredited by the manufacturer.

- **Unfeasible:** When a scenario cannot be solved by any of the defined profiles.

Compostable packaging

Container designed with materials capable of decomposing naturally under the action of micro-organisms present in the composter to become a natural or organic component of the substrate.

Corrective update :

A corrective software update is a modification or set of modifications made to a software or operating system or functionality in order to correct defects, errors or malfunctions identified after it has been put into service. These corrections aim to restore or improve the correct operation of the product or system without introducing major new functionalities. It may include corrections relating to :

- Technical errors (bugs) in software
- Design errors or user biases
- Security flaws identified after deployment

This type of update is often distinct from an evolutionary update (which adds functionality) or a preventive update (which aims to anticipate future problems).

Criticality

The criticality of a failure refers to the importance or impact of this failure on the correct operation of a product. It is assessed on the basis of the severity of the consequences the failure could have, particularly in terms of safety/costs, and the frequency of occurrence.

Data management process
Refers to the set of practices and procedures put in place by an organization to collect, store, process, protect and manage the personal information of individuals using their products.

Disassembly depth
Corresponds to the sum of the steps required to access each part individually and to separate it from the equipment, with a view to its replacement.

Electrodomestic
Product powered by electrical energy and intended for domestic use only.

EOS
An acronym for Electrical Overstress, meaning an undesirable state of electrical overload that could lead to product damage or failure.

Expected service life
Period during which the user expects the product to perform as intended.This expected lifetime is defined on the basis of scientific literature and/or consumer surveys. When the data is not available or is insufficiently robust, the expected lifetime is defined by the author of the standard, based on the expertise of the LONGTIME® teams and its network.

Experienced tools
Tools that require skill to use and whose cost can be a barrier (torque wrench, soldering iron, etc.).

External source parts
Parts external to the manufacturer's production facility, sourced from an identified supplier.

Fair Mined Material
Fair Mined Material refers to raw materials used in the device for which the manufacturer can credibly demonstrate active efforts to improve at least one of the following aspects during the extraction stage: working conditions, workers' income, or environmental protection. This means that the manufacturer is committed to ethical practices by ensuring better labor conditions, fair compensation for workers, and/or implementing measures to minimize environmental impact in the sourcing of these materials.

Full Material Declarations
Full Material Declarations (FMD) in the context of a Product Life Cycle Assessment (LCA) refer to comprehensive and detailed disclosures of all materials and substances used in a product. This includes a complete list of every material, chemical, and component that makes up the product, along with relevant information about their quantities, sources, and potential environmental or health impacts.

General-purpose tools
Common, general-purpose tools available to the general public in standard distribution and as specified in the EN 45554 tool list: screwdrivers (slotted head, cross-head, 6-lobe internal screws), wrenches (hexagon socket, combination wrenches), pliers (universal, half-round nose, diagonal cutting, multi-socket, vice, for stripping and crimping terminals), pry bar, tweezers, steel-headed hammer, universal knife (cutting pliers with retractable blade), multimeter, voltage tester, soldering iron, glue gun, magnifying glass.

High-utility product
A product that is used very frequently and which, in the event of failure, causes a significant disruption to day-to-day management: refrigerator, washing machine, boiler/water heater, telephone, computer, hob, etc.

HS
Out of order; corresponds to the end of the functional state.

IOT
Internet of Things; this function refers to the ability to connect a product to the Internet for additional remote control and/or regulation functions.

Manual
Comprehensive guide or instructional resource that provides detailed information on how to use, operate, maintain, or assemble a product, system, or process. It can take various forms, including printed booklets, digital documents (such as PDFs), illustrated tutorials, or video instructions. Its purpose is to offer clear, step-by-step guidance to users, ensuring they can correctly and efficiently engage with the product or service it accompanies.

No use
Corresponds to a state of non-operation of the device.

Non-recyclable packaging
Packaging that cannot be effectively recovered, recycled or reused after use.

Non-recoverable packaging
Refers to a type of packaging that cannot be effectively recovered, recycled or reused after use.

O.S
Operating System is a set of programs that direct the use of a computer's resources by application software.

Permanent assembly
This is an assembly of components forming a single part or component of a product, which cannot be disassembled without destroying or altering its intended use.
To remove the connection between two assemblies or parts, it is necessary to deform, degrade or destroy at least one of the parts forming the assembly. Examples: welding, crimping, clinching, stamping, gluing and adhesives.

Primary data or information
Information directly measured or collected by the professional in one or more installations representative of the professional's activities.

Product/part unit cost price (PRU)
Understood as the sum of the price of the parts making up a product/of the components of a part.

Professional tools
Tools requiring special knowledge or conditions of use, and whose acquisition cost represents an investment.

Professional user
Means any natural or legal person, to whom a product has been made available for use in the course
of their industrial or professional activities

Proprietary tool
A specific tool, not commercially available, belonging exclusively to one party or company, by virtue of which its use by another party (end user, customer, repairer) involves copyright, a license and/or a cost.

PSR
"Product Specific Requirement, corresponds to the criterion specifications applicable to the types of equipment specified within the scope of the standard.

Reconditioned part
A second-hand product or spare part, within the meaning of Article L. 321-1 of the French Commercial Code, may be qualified as a "reconditioned product" or be accompanied by the term "reconditioned", provided the following conditions are met:

- The product or spare part has undergone tests on all its functionalities in order to establish that it complies with legal safety requirements and the use to which the consumer can legitimately expect it to be put.
- If necessary, the product or spare part has undergone one or more operations to restore its functionality. This intervention includes the deletion of all data recorded or stored in connection with a previous use or a previous user, before the product or part changes ownership."

Recyclable material or product
A recyclable material or product is one whose characteristics allow it to be diverted from the waste stream through available collection and processing systems, enabling its reintegration as raw material or a new product (based on ISO 14021).
A recycled material or product is manufactured entirely or partially from materials that have been recovered after initial use and subjected to a transformation process—mechanical, chemical, or other—to be reintroduced into the production chain.

Recycling excludes the direct reuse of products or components without prior transformation and aims to reduce the consumption of virgin raw materials.

Regular maintenance
Maintenance recommended by the manufacturer to keep the product in optimum working order.

Removable fastener
Corresponds to an original fastening system which can be removed during disassembly without damaging the product, but which cannot be reused during reassembly (e.g. plastic clamp, rivet).

Replacement or spare part
A replacement part is a separate part intended to replace a defective or degraded part having the same or a similar function of a good in operation; (Source: Annexes to the European Regulations laying down ecodesign requirements in accordance with Directive 2009/125/EC).

Return conditions for a repair process

- Complete returns conditions: special arrangements are in place to encourage the return of the product for a repair process, whether to the manufacturer, a partner or a repairer: free shipping, home pick-up, free replacement product during the repair process, free repair. These special arrangements are available both under warranty and out-of-warranty.
- Basic return conditions: users wishing to repair their product have the option of returning it for repair, but there are no special arrangements in place to facilitate this process (charges, etc.).
- No return solution: the end-user has no way of returning the product to the manufacturer or one of its partners for repair.

Reusable packaging
Container designed to be used over and over again, reducing the need for disposable packaging.

Reusable fastener
Corresponds to an original fastening system removed during disassembly without altering the product, and which can be reused during reassembly (e.g. screws, clips).

Reused parts
To date, there is no official definition of "re-use parts", but a definition of "re-use" provided in Article L. 541-1-1 of the French Environment Code, which defines it as follows:
Reuse: "an operation by which products or components that are not waste, are used again for a use identical to that for which they were designed".

Selling price of a spare part

Deduction of delivery costs: The principle adopted is to calculate without including transport or delivery costs. If these costs are included in the pricing of the general sales conditions, it is the responsibility of the producer or importer to deduct them for the calculation of the ratio. Specifically, for the price of spare parts, two methods are possible for deducting transport or delivery costs: individually for each part on list 2 or as a flat rate (in absolute value or as a percentage). The same applies to the price of new equipment.

Spare part(s) included in a set: If one or more parts are included in a set offered for sale or any other inseparable sub-assembly of parts, the price of the relevant part is the price of that sub-assembly.

Parts not managed by the producer or importer: If parts from list 2 are not managed by the producer or importer, the price of the parts to be considered is the price listed in the supplier's general sales conditions at the time of the index calculation.

Product options with the same reference: If options are offered for the same reference and do not affect the technical characteristics, then the price ratio calculation should be based on the price of the spare parts and the price of the most common version of the product concerned.

Criterion 21 is established by calculating the ratio between: the ex-tax price of the spare part and the ex-tax price of the relevant equipment model, where each price is understood as the ex-tax price from the current price list at the time of the certification process and listed in the general sales conditions of the manufacturer or importer, or in any other relevant contractual document if not available.

If a manufacturer or importer has, for the parts or equipment concerned, several price lists depending on the different categories of distributors or sellers, the prices used for the index calculation are those from the price list that accounted for the highest share of the manufacturer’s or importer’s turnover for the type of parts or equipment concerned during the last closed fiscal year.

Serialization
Practice by which the manufacturer limits the use of spare parts to only those original parts that it approves, in particular by means of software.
Example: associating the serial numbers of a product's components with the product's overall serial number.

Spare part
A spare part is a distinct part that is an integral part of a product, essential to fulfill its primary function. It is not supposed to be replaced as part of normal use of the product, but may be replaced following accidental damage, long-term wear and tear, premature wear due to incorrect use or maintenance, or misplacement. In such cases, the spare part is exchanged for a replacement part.

Spare parts interface

Refers to the way in which parts connect or integrate with the existing components of a product. Depending on the type of part and the type of interface used to connect them, a classification is established: A standard part is a component, a part, manufactured to recognized specifications and standards, commonly used and compatible with various products or systems.

- **Standard part with standard interface:** Designates a standard part, manufactured according to recognized specifications and standards, commonly used and compatible with various products or systems, and whose connection or interaction with other components, devices or systems is based on standardized or widely used and accepted specifications.
- **Standard part with proprietary interface:** Refers to a standard part, manufactured according to recognized specifications and standards, commonly used and compatible with various products or systems, and whose connection or interaction with other components, devices or systems is based on specifications specific to a particular manufacturer or company.
- **Proprietary part with non-standard interface:** Refers to a non-standard part, exclusive to a product or company, usually produced in-house or under license. This type of part may have unique specifications that make it incompatible with other products or brands. In addition, it may be designed with a specific connection to other components, devices or systems, also based on specifications specific to a particular manufacturer or company.

Step (disassembly)
Operation leading to part removal or tool change.

Sub-assembly
A set of inseparably connected components that form a block and perform a function. The sub-assembly may be separate from the product.
Example: Soldered motor and electronic board

Usage stress
This corresponds to the forces applied to the part.

Used parts
Used goods are goods which, at any stage of production or distribution, have come into the possession of a person for his or her own use, by the effect of any act for valuable consideration or free of charge, or have undergone alterations which do not allow them to be offered for sale as new (Source: Article L321-1 of the French Commercial Code).

Waste
Any substance or object, or more generally any movable asset, which the holder discards or intends or is required to discard. (Source: Directive n°2008/98/CE of November 19, 2008 on waste)

Working environment

When solving failure scenarios, a number of different working environments can be identified.

- **Operating environment:** Corresponds to the environment in which the product is used and does not express any specific requirements relating to the working environment for the resolution of failure scenarios.
- **Workshop environment:** Corresponds to an environment which does not require a production environment (class C), but where failure resolution scenarios cannot be carried out in the operating environment.
- **Production environment:** Corresponds to an environment necessary for the resolution of failure scenarios which is comparable to that in which the product was manufactured.

IX. BIBLIOGRAPHICAL RESOURCES

This paragraph lists the main bibliographical resources used to draw up the sector reference guide, which are likely to evolve according to the target product groups.

- DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- DIRECTIVE 2014/35/EU of 26 February 2014 on the harmonisation of the laws of Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits (recast) low voltage directive (LVD)
- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- DIRECTIVE 2012/19/EU on waste electrical and electronic equipment (WEEE)
- DIRECTIVE (EU) 2006/66/EC of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC
- REGULATION (EU) 2023/1542 of 12 July 2023 on batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020, and repealing Directive 2006/66/EC
- Delegated Regulation (EU) 2019/2015 supplementing Regulation (EU) 2017/1369 with regard to energy labelling of light sources and repealing Delegated Regulation (EU) No 874/2012
- EN 60335-1 COMPIL 15 Household and similar electrical appliances - Safety - Part 1: General requirements
- DIRECTIVE 2014/30/EU of 26 February 2014 on the harmonisation of the laws of Member States relating to electromagnetic compatibility (recast)
- EN 45552 General method for assessing the sustainability of energy-related products
- EN 45554 General methods for assessing the repair, reuse and upgradeability of energy-related products
- IEC 60384-14 Standard Fixed capacitors used in electronic equipment – Part 14: Intermediate specification – Fixed capacitors for interference suppression and power connection
- EN 60529 Degrees of protection provided by enclosures (IP code) (UL50E or NEMA 250)
- EN 62262 Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)
- *Lithium-Ion Batteries Hazard and Use Assessment _ Exponent Failure Analysis Associates, Inc. July 2011 Fire Protection Research Foundation*

X. VERSION UPDATE

Implemented in 2025, the LONGTIME V2 base reference system is scheduled to be valid for 5 years before its next revision in 2030, with the exception of minor changes.

Version number	Date of release	Summary of action	Editor
V2 Standard_Metal detector	07/2025	Final edition	F.Preguesuelo
V2 Standard_Metal detector	03/2025	Draft edition and consultation	F.Preguesuelo
V1.6 Standard_Metal detector	06/2023	Final edition	F.Preguesuelo
V1.6 Standard_Metal detector	11/2022	Development with draft editing and consultation	F.Preguesuelo
Sectoral Annex V1_Metal detector	05/2019	Final edition	F.Preguesuelo
Sectoral Annex V1_Metal detector	01/2019	Draft edition and consultation	F.Preguesuelo
Sectoral Annex V1_Metal detector	07/2018	Commencement of the drafting process	F.Preguesuelo

XI. ACKNOWLEDGEMENTS

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